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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: FORREST ET AL)
)
 Application No.: 09/992,268)
)
 Filing Date: 11/14/01)
)
 For: METHOD FOR PRODUCING A USER)
 INTERFACE TRANSLATION SYSTEM)
)
 Art Unit: UNKNOWN)



TRANSMITTAL OF PRIORITY DOCUMENT

Director for Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Enclosed herewith is a certified copy of British Patent Application No. 0027811.9
for which the above-identified patent application claims priority from.


If, for any reason, this priority document is not acceptable, please inform the
undersigned as soon as possible.

Respectfully Submitted

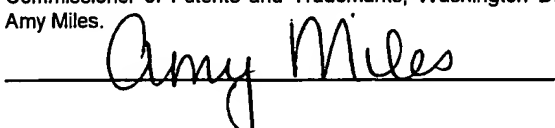
HEAD, JOHNSON & KACHIGIAN

Date: 12/17/01

Customer No. 24,118


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INVESTOR IN PEOPLE

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Concept House
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NP10 8QQ

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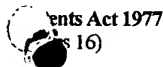


Signed

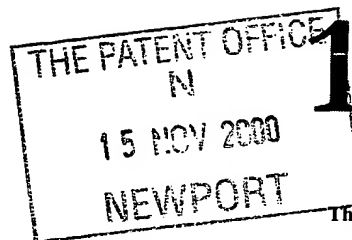
W. Evans

Dated 15 November 2001

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1/77

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15 NOV 2000

The Patent Office

Cardiff Road
Newport

Gwent NP9 1RH

1. Your reference

GW-30605

2. Patent application number

(The Patent Office will fill in this part)

0027811.9

15NOV00 000764 2 000346
P01/7700 0.00-0027811.9

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Pace Micro Technology Plc

Victoria Road
Saltaire
Shipley
BD18 3IF

Patents ADP number (if you know it)

7588569001

If the applicant is a corporate body, give the country/state of its incorporation

England

4. Title of the invention

Method for Producing a User Interface Translation Tool

5. Name of your agent (if you have one)

Bailey Walsh & Co.

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

5, York Place
Leeds
LS1 2SD

Patents ADP number (if you know it)

224001

6. If you are declaring priority from one or more earlier patent applications, give the and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number
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Date of filing
(day / month / years)

7. If this application is divided or otherwise derived from an earlier UK application, the earlier application

Number of earlier application

Date of filing
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8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer "Yes" if:

Yes

- a) any applicant named in part 3 is not an inventor, or
 - b) there is an inventor who is not named as an applicant, or
 - c) any named applicant is a corporate body
- See note (d)

Patents Form 1/77

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Continuation sheets of this form

Description

7

Claim(s)

Abstract

Drawing(s)

10. If you are also filing any of the following, state how many of each item.

Priority Documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (*Patents Form 7/77*)

Request for preliminary examination and search (*Patents Form 9/77*)

Request for substantive examination (*Patents Form 10/77*)

Any other documents
(Please specify)

11.

I/We request the grant of a patent on the basis of this application

Signature



Date

14.11.00

12. Name and daytime telephone number of person to contact in the United Kingdom

G Wood
0113 2433824

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Method for producing a User Interface Translation Tool

This invention relates to a method for producing a user interface translation tool. The invention is particularly, although not exclusively, of advantage with respect to Broadcast Data Receiver apparatus (BDR's).

User interfaces are typically provided for display on a display screen of an electronic device, to allow effective operation and control of the electronic device by a user. The language components of the user interfaces are typically provided in a first language set by the manufacturer, such as English. However, in order to allow effective operation of the electronic device by a user whose language is different to the first language provided in the interface, each language component of the interface typically needs to be translated into an appropriate language.

In many interface operating systems for international use, the appropriate translations corresponding to the language components of the interface are stored in text files, with separate files being used per different translation and per interface. A particular file containing the desired translation can then be applied to the interface to convert the language components in the first language to the desired language. A problem with this is that a word in one particular language can contain a certain number of characters, which, when translated into a different language can contain a larger or smaller number of characters. As such, the locations/buttons on the interface for which the language components are designed to fit in one language, may be too small or too big to fit the translations therein. This is obviously undesirable and may result in the language components of a translated interface being truncated and thus being unclear or meaningless to a user. In addition, it is

typically time consuming and therefore expensive to manually adjust the size of the locations/buttons of an interface for each different translation.

It is therefore an aim of the present invention to provide a method of producing a user interface translation tool for an electronic device which overcomes the abovementioned problems.

According to a first aspect of the present invention there is provided a method for producing a user interface translation tool for an electronic device, said device having a display screen for display of a user interface, said method comprising the steps of attaching a unique label to each language component of the user interface, recording data relating to each unique label of the language components in storage means, together with equivalent translations of each language component into at least one other language, linking the recorded data with the user interface, matching each unique label of the interface with an equivalent unique label of the recorded data and upon selecting one of the available languages, inserting the required translation of the language component corresponding to the equivalent unique labels.

Preferably the storage means in which the data is recorded includes a single file containing the unique labels of each language component of the interface.

Preferably the unique labels within the single file are linked to a plurality of foreign translations corresponding to each language component.

Preferably the user interface is for a broadcast data receiver (BDR) of the type receiving audio, visual and/or auxiliary data from a remote broadcaster.

Preferably the unique labels are provided with delimiting means to allow the matching of the labels with the corresponding translation in the single file.

Preferably the language components of the user interface include words and/or sentences.

Preferably the language components are provided in specific locations/buttons on the user interface.

Preferably the tool adjusts the size of the locations/buttons of the interface accordingly to allow the translation to fit therein.

In one embodiment the user interface translation tool is provided for use in a broadcast data receiver, the interface providing user control of the broadcast data receiver. The broadcast data receiver typically receives broadcast digital data from a remote source and decodes the data for display on a display screen, audio for speakers and/or the like.

An advantage of the present invention is that the translation tool can be used both to translate the language components of the interface into a required language and adjust the buttons/locations on the interface to fit the translation using the unique labels. This method significantly reduces the time taken to manually translate each language component and fit the translation onto a button or location on the interface. The method of the present invention also reduces the chance of error occurring during translation. Maintenance of the user

interface therefore becomes simpler and global changes to the interface can be made using a single file.

Textual messages can be changed without having to delve into the often complex files forming the user interface. In addition, linguists receive only a single file of language components to translate and they do not need to be concerned with the actual files comprising the user interface. For example, a user interface might use a combination of HTML and ASCII (American Standard Code for Information Interchange) files and this unnecessary complexity is hidden from the linguists.

A yet further advantage of the present invention is that since the translate tool simply implements replacement of the unique label, its usage may be extended beyond translations. For example, if a common background colour is used on all user interface screens, a special label may be used that contains that colour information. If this colour then needs to be changed, only the colour in the single translation file needs to be changed, rather than many files as is required conventionally.

An embodiment of the present invention will now be described with reference to the following description.

A user interface typically comprises a plurality of buttons/locations in which language components are contained to allow a user to navigate through the interface to control and/or operate an electronic device. An example of language components can include menu bar options, such as a "start" button, "file" button, "help" button, "edit" button and/or the like.

The language components of the user interface are provided, in this example, in English and the buttons are appropriately sized

to fit the language components therein. If the language components then need to be translated to allow a foreign speaking user to operate the device, conventionally each language component would typically need to be checked to see if the translation fits into the space in the required button. This is obviously time consuming and undesirable.

In accordance with the present invention, the files that make up the user interface are each taken in turn and each language component (i.e., each word and/or sentence) within the file is replaced by a unique label, which in this description is referred to as a "token". The language components and the corresponding tokens are copied to a separate file called the "token file" which is used by the translation tool. The process of applying a token is referred to as "tokenisation". An example of an extract prior to tokenisation is as follows:

```
<CENTER>
<H2>Translation tool</H2>
This is an example of the tokenisation process
<BR>
<EM>End of Example</EM>
</CENTER>
```

An example of the above extract following tokenisation is as follows:

```
<CENTER>
<H2>««translate_heading»»</H2>
««translate_text»»
<BR>
<EM>««translate_footer»»</EM>
</CENTER>
```

In the above example, the tokens are delimited by “«»” and “»»” in order that the translate tool can recognise them in amongst the surrounding text. The delimiters are configurable, thus adding flexibility to the process and prevents a problem where the delimiters themselves are used in the user interface.

The resulting token file of the above example would then be in the form <token_name>:<language_component><EOL> (End of Line) as follows:

```
Translate_heading:Translation tool
Translate_text:This is an example of the tokenisation process
Translate_footer:End of example
```

The token names can be varied providing that the tokens are unique for each language component of the user interface.

After tokenisation a single token file is produced containing a set of unique tokens referencing all language components of the user interface. The language components of the token file are translated into one or more appropriate languages, the token names remaining unchanged. For example,

```
Dbox_poweroff_query:Are you sure you want to power off?
```

Translates in Swedish to:

```
Dbox_poweroff_query:Vill du Stänga av?
```

The translated token file is then linked or integrated into the software component of the user interface. A software tool locates each token of the user interface, performs a match against the tokens in the token file and the text corresponding

to the token is then placed into the newly constructed user interface in place of the token. Upon completion, the result is a new set of user interface files translated into the target language which fit into the required buttons/locations of the interface. The buttons/locations can be resized by placing the button sizes in the translation files with the tokens.

Thus the present invention allows global changes to a user interface to be performed both quickly and easily without the requirement to change multiple files. Maintenance of the user interface can be undertaken easily, with any updates simply made to a single token file.

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